

IN THE SPECIFICATION:

On page 1, prior to line 1, please insert the following heading and paragraph:

--Cross-reference to Related Applications

This application is for entry into the U.S. national phase under §371 for International Application No. PCT/IB02/00978 having an international filing date of March 28, 2002, and from which priority is claimed under all applicable sections of Title 35 of the United States Code including, but not limited to, Sections 120, 363 and 365(c).--

On page 1, please amend the paragraph beginning at line 33 as follows:

--In accordance with a first aspect of the invention, the object is achieved with a method for improving a digital image for displaying an improved image on a display. The method comprises improving a digital image for displaying an improved image on a display, comprising:

- determining an instantaneous property of the display;
- determining a property of the digital image;
- determining parameters for an image processing method at least partly on the basis of said instantaneous property of the display, and said property of the digital image; and
- processing the digital image by means of said image processing method, while applying said parameters.--

On page 2, please amend the paragraph beginning at line 22 as follows:

--Further, according to the method, the very image is processed on the basis of, inter alia, the instantaneous display property. It is to be noted that the thus improved image is improved as regards the appearance thereof on the display in question. Thus, rather than merely adjusting one or a few properties of the display, as in the prior art, properties of the very image are adjusted so as to adapt the image to the display on which it is displayed. The adjustment is performed on an instantaneous basis, i.e. on the basis of said instantaneous property of the display. In other words, the current state of the property is determined, as a part of the image improvement method according to the present invention. Thus, not only static but also dynamic circumstances are

taken into account by the method according to the invention. The tool for adjusting the image is an image processing method. The parameters for the method are set in dependence of properties of the original, non-improved image, and of the display.--

On page 4, please amend the paragraph beginning at line 6 as follows:

--This embodiment is preferred when the display is of a type having a small color gamut. Such displays are typical for applications where a low power consumption is desired. Such applications are typically mobile devices. Typical displays are transfective displays and the like, as will be further discussed below. An advantage of these simple methods is that they have small requirements of processing capacity, and thus they are suitable for mobile applications. Still the image improvement capability of these methods is enough for causing a significant improvement of the quality of the displayed image. To a person skilled in the art, this may seem contradictory, since these simple methods are known to be accompanied with some overcompensating properties, in turn causing undesired effects, as will be further explained below. However, it has turned out that these undesired effects are masked to a sufficient extent by said small color gamut displays, leaving, substantially, merely the image improvements to the eyes of a viewer.--

On page 6, please amend the paragraph beginning at line 26 as follows:

--The display unit 3 comprises a display 11, a display memory 13, connected to the display 11, for holding images which are displayed, a display adjustment unit 15, connected to the display 11, by means of which display properties are adjusted, and a display processor 17, connected to the display memory 13 and to the display adjustment unit 15. In this embodiment the display processor 17 serves as an image improvement unit. Further, the mobile device comprises an ambient light sensor 19, which is connected to the micro controller 5. As is understood to a person skilled in the art, the mobile device comprises many other parts and circuits in dependence of what type of device it is. However, for reasons of clarity and simplicity, merely those parts which are needed for the disclosure and explanation of the present invention are illustrated. It is an easy task for a skilled person to add general functionality in order to obtain a fully competent device, such as a mobile phone, a PDA device,

i.e. a small mobile hand-held device that provides computing and information storage and retrieval capabilities for keeping schedule calendars and address book information handy, a laptop computer, i.e. an all-in-one computer that is easily portable, video glasses or other accessory devices to portable devices, etc.--

On page 7, please amend the paragraph beginning at line 33 as follows:

--In a mobile device, a general aim is to minimise the power consumption of the circuitry of the device as well as of the processes run by the circuitry. It is therefore preferred that the display is of a low power type, and preferably is a reflective or transfective LCD display. As a contrast CRT displays can be mentioned, which have a relatively high power consumption. On the other hand, it has been shown that, at present, reflective and transfective LCD displays have some ~~insufficient~~ poorer properties in comparison with, for example, CRT displays. The color gamuts of the low power displays are relatively small, and, additionally, they are dependent on the intensity and quality of the ambient light, and of the internal light source, which is energised when necessary. Further, the contrast ratio is quite low. These deficiencies result in that many images appear to have low contrast and faint colors. Consequently, preferred image processing algorithms are those which compensate for the low color gamut and low contrast ratio. There do exist advanced algorithms, which can be tailored for a certain type of display and adapt any image as far as possible. However, when it comes to a mobile device, the processing capacity thereof is limited, and so is the available power. Consequently, it is preferred that the image processing algorithms are simple and consume little power. It has proven possible to achieve this while still achieving a substantial improvement of the perceived image quality.--

On page 8, please amend the paragraph beginning at line 33 as follows:

--Another useful algorithm is a componentwise histogram stretching algorithm, which stretches the dynamic range of each color component of the image. After stretching, the dynamics of the image signal are effectively utilized. Typical drawbacks are over-colored image, resulting in contouring. It has been proven that due to the low dynamics of the above-mentioned low-power displays, the contouring remains below a disturbing level, and the image does not appear to be over-colored. This algorithm is illustrated in Fig. 4, where the smaller hatched area

represents the color gamut of the original image, and the larger hatched area represents the color gamut of the improved image.--